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Acute Generalized Peritonitis Due to the Migration of a Ballpoint Pen from Bladder to Great Peritoneal Cavity: A Case Report

Barnabé Zango[1], Fasnéwindé A. Kaboré[1*], Moussa Kaboré[1], Brahima Kirakoya[1], Bienvenue D. Ky[1], Clôtaire Alexis Marie Kiemdiba Donega Yameogo[1], Adama Ouattara[2], Boukary Kabré[1], Timothée Kambou[2]

[1]Department of Urology, Yalgado Ouédraogo Teaching Hospital, Ouagadougou, Burkina Faso
[2]Department of Urology, Sanon Souro Teaching Hospital, Bobo Dioulasso, Burkina Faso
Email: *kaborefamd@me.com

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Abstract

Foreign bodies of the bladder are rares. The presence of a foreign body in the bladder is often anecdotic. We report a case of acute generalized peritonitis due to migration of a ballpoint pen from bladder to great peritoneal cavity in a 17-year-old man. He was admitted for a peritoneal syndrome after introducing a ballpoint pen into the urethra to masturbation purposes. He has no psychiatric history. Exploration had found an agglutination of small bowel loops around the ballpoint pen. The ballpoint pen was about 13.5 cm long and was transfixing the small intestine. We had noted about 20 cm of ileal necrosis about 30 cm from the ileocecal junction. An exit port was located at the posterior wall of the bladder. We performed a resection of the necrotic portion followed by end-to-end anastomosis. Bladder foreign bodies can have serious complications such as the formation of an acute surgical abdomen after migration of the foreign body. The extraction must be quickly carried as soon as the diagnosis is made to avoid these complications.

Keywords

Foreign Body, Peritonitis, Urinary Bladder, Surgery

1. Introduction

Several circumstances are often the causes of the presence of a foreign body (FBs) in the urinary tract. Bladder

*Corresponding author.

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foreign body (FBs) may be self-inserted through the urethra, iatrogenic, migratory or due to penetrating trauma [1]-[4]. Among these circumstances self-insertion through the urethra for the purpose of sexual stimulation or masturbation are the most common cause of bladder FBs [1] [2]. The FBs can cause serious complications such as perforation of the urinary bladder or hydronephrosis [2] [5] [6]. The perforation of the urinary bladder followed by the migration of the foreign body into the great peritoneal cavity can cause a surgical acute abdomen [2]. The aim of this study is to report a case of migration of a ballpoint pen into the great peritoneal cavity and describe the circumstances and therapeutic implications.

2. Case Report

Mr. K. O. 17-years-old, pupil admitted to our department of urological emergencies for a hypogastric pain and urethral pain. The patient confessed that 24 hours before he introduced a ballpoint pen into the urethra during masturbation. He has no psychiatric history. An abdominal X-ray study showed a linear foreign body in the projection area of the bladder (**Figure 1**). An endoscopical surgery extraction of the foreign body was planned but the patient refused the surgery despite the medical advice. Three days later the patient presented with generalized abdominal pain associated to fever. On physical examination he had an infectious syndrome and a peritoneal syndrome. The patient had no hematuria, no pneumaturia, and no fecaluria. Blood routine test revealed a white blood cell count of 17,000/mm^3. A new abdominal radiography showed a migration of the foreign body in the abdominal cavity (**Figure 2**). The diagnosis of acute generalized peritonitis was done and an

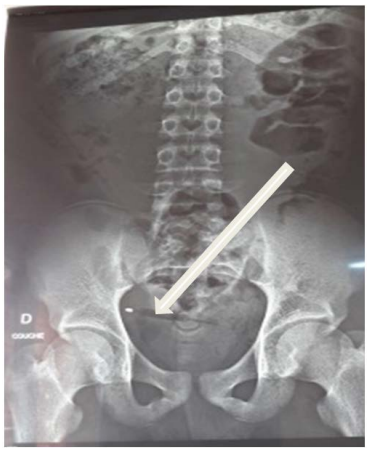

Figure 1. Abdominal radiography revealed a foreign body in the bladder area.

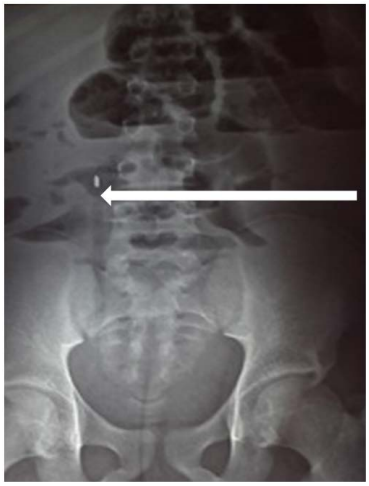

Figure 2. Migration of the foreign body.

explorative laparotomy was performed. After opening the abdomen we aspirated 300 cc of purulent peritoneal fluid. Exploration had found an agglutination of small bowel loops around the ballpoint pen. The ballpoint pen was about 13.5 cm long and was transfixing the small intestine (**Figure 3**). We had noted about 20 cm of ileal necrosis located about 30 cm from the ileocecal junction. The ballpoint had perforated the posterior bladder wall (**Figure 4**). We performed a resection of the necrotic portion of the ileum followed by end-to-end anastomosis (**Figure 5**). The bladder perforation was closed in two layers, and a urinary catheter was placed. Antibiotics

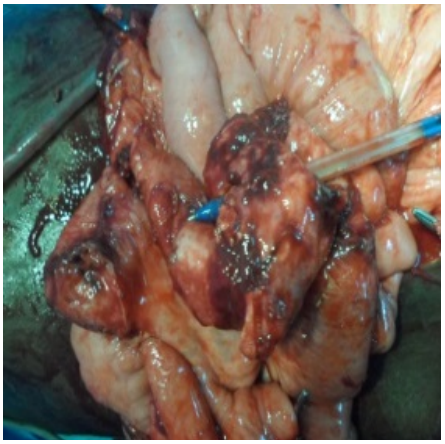

Figure 3. Agglutination of bowels around the pen.

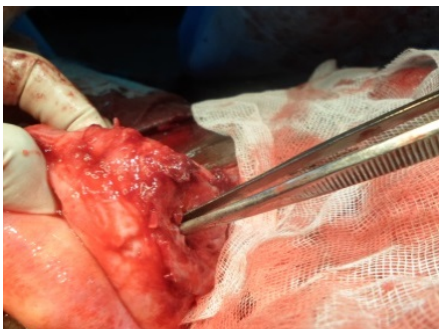

Figure 4. The opening of the posterior wall of the bladder.

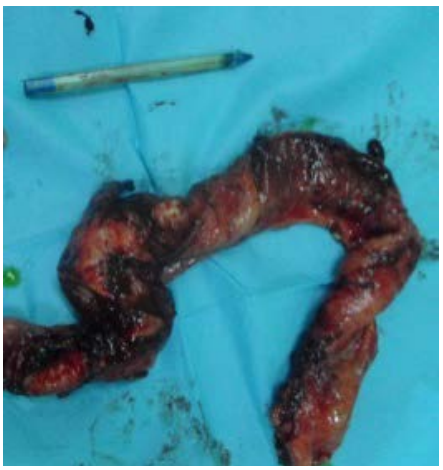

Figure 5. Necrotic segment of ileum.

and rehydration were administered. The patient's perioperative clinical course was uneventful. The catheter was removed on the seventh postoperative day and the patient was discharged from the hospital. After five months followup the patients had no complications.

3. Discussion

The presence of a foreign body in the urinary tract systematically raises the question of the circumstances of its introduction [1]-[7]. Among these circumstances, some often seem to be anecdotic. It may be a self-insertion, iatrogenic presence or migration of an object from neighboring organ such as uterus and sigmoid [2]-[9]. The presence of an object into the bladder for masturbation purpose or other forms of sexual variation is the mains circumstances of self-insertion of a bladder foreign body through the urethra [1]-[9]. However, many cases are associated with dementia, other psychiatric abnormalities, or drug intoxication [7]-[9]. Cases of Intravesical migration of intrauterine device had been described in the literature [1]. The foreign body may also migrate into the bladder from the gastrointestinal tract [4]. The foreign bodies described in the medical literature are varied: pens, pencils, thermometer, intrauterine device, needles etc. [3]-[10]. Migration of Intravesical foreign body in the abdominal cavity is rare and depends mainly on the nature of the object, its length and its sharp character [1]. In our case, the ballpoint pen length was 13.5 cm and has perforated the posterior wall of the bladder. This perforation is facilitated by two factors: the length of the pen which exceeds the diameter of the bladder when the bladder is empty and detrusor contraction during urination. This intraperitoneal migration manifests itself clinically by an acute abdomen as intestinal obstruction or acute generalized peritonitis especially in case of perforation of a hollow organ such as the ileum [2]-[11]. This can lead to a resection of intestinal loops in case of necrosis. A case of acute intestinal obstruction by migration of a foreign body in the abdominal cavity had been reported [11]. When the foreign body remains intravesical, the symptomatology is dominated by urinary symptoms. The radiological assessment will determine the size, the seat, the number and nature of foreign bodies [2]. Various treatment options are reported for the treatment of bladder foreign body: endoscopic, laparoscopic, percutaneous, radiological and open surgery [1] [6] [8]. The method of choice for extraction varies according to the size and mobility of the object inside the bladder. According to Raheem [6] the availability of surgical instrumentations and urologist experience plays an important role in the choice of the therapeutic method. With the advent of a variety of modern endoscopic instruments, open surgery is rarely required [1] [6] [8]. Bladder foreign body can be removed endoscopically through Cystoscopy using grasping forceps. Smaller FBs can be retrieved intact, whereas bigger ones require fragmentation [8]. Regardless of the surgical method our case demonstrated that the removal of a bladder foreign body should be done as soon as the diagnosis is made to prevent serious complications.

4. Conclusions

Bladder foreign bodies can have serious complications such as the formation of an acute surgical abdomen after migration of the foreign body.

The extraction must be quickly carried as soon as the diagnosis is made to avoid these complications.

Conflict of Interest

None.

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